

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): ~~The method as claim in claim 1~~ A method for fabricating an article from an object material including an object fine surface structure thereon having an object size, the method comprising:

fabricating a first mold from a first material, said first mold including a fine surface structure corresponding to the object fine surface structure and having a first size less than the object size;

fabricating a second mold by transferring the fine surface structure of the first mold to a second material so that the fine surface structure transferred to the second material has a second size greater than the first size and less than the object size;

fabricating the article by transferring the fine surface structure of the second mold to the object material so that the fine surface structure transferred to the object material has the object size, wherein

the second step fabricating of the second mold comprises:

a step of applying a first curable resin onto the first mold to cover the fine surface structure thereof, and pressing the second material against the first mold with the first curable resin in between to transfer the fine surface structure of the first mold to the first curable resin;

a first curing step of curing at least a portion of the first curable resin;

a first separating step of separating the first curable resin from the first mold with the first curable resin being bonded with the second material; and

~~a first transferring step of~~ transferring the fine surface structure of the first curable resin to the second material by dry-etching to form the second mold; and

the ~~third step~~ fabricating of the article comprises:

~~a step of~~ applying a second curable resin onto the second mold to cover the fine surface structure thereof and pressing the object material against the second mold with the second curable resin in between to transfer the fine surface structure of the second mold to the second curable resin;

~~a second curing step of~~ curing at least a portion of the second curable resin;

~~a second separating step of~~ separating the second curable resin from the second mold with the second curable resin being bonded with the object material; and

~~a second transferring step of~~ transferring the fine surface structure of the second curable resin to the object material by dry-etching to form the article.

Claim 3 (Currently Amended): The method as claimed in claim 2, further comprising ~~steps of~~:

performing a first de-molding treatment on the first mold to facilitate separation of the first curable resin from the first mold after the ~~first step~~ curing of at least a portion of the first curable resin and before the fabricating of the second mold ; and

performing a second de-molding treatment on the second mold to facilitate separation of the second curable resin from the second mold after the ~~second step~~ fabricating of the second mold and before the ~~third step~~ fabricating of the article.

Claim 4 (Currently Amended): The method as claimed in claim ~~[[1]]~~ 2, wherein before the ~~third step~~ fabricating of the article, the ~~first step~~ curing of at least a portion of the

first curable resin and the ~~second step fabricating of the second mold~~ are repeated a plurality of times to fabricate a plurality of second molds.

Claim 5 (Currently Amended): The method as claimed in claim 2, wherein  
the ~~first-transferring step of~~ fine surface structure of the first curable resin includes a  
~~step of~~ changing a dry-etching selection ratio of etching the first curable resin and the second  
material; and  
the ~~second-transferring step of~~ fine surface structure of the second curable resin  
includes a ~~step of~~ changing a dry-etching selection ratio of etching the second curable resin  
and the object material.

Claim 6 (Currently Amended): The method as claimed in claim 5, wherein in each of  
the first transferring ~~step of~~ the fine surface structure of the first curable resin and the ~~second~~  
transferring ~~step of~~ the fine surface structure of the second curable resin, the dry-etching  
selection ratio varies with time.

Claim 7 (Currently Amended): The method as claimed in claim 2, wherein  
at least one of the first curable resin and the second curable resin includes a light  
curable resin; and  
at least one of the first material and the second material, and one of the second  
material and the object material sandwiching the light curable resin, include a light  
transmittable material, and the light curable resin is cured in the ~~first-curing step of~~ at least a  
portion of the first curable resin and the ~~second~~ curing ~~step of~~ at least a portion of the second  
curable resin by irradiating light through the light transmittable material.

Claim 8 (Original): The method as claimed in claim 7, wherein  
the light curable resin is an ultraviolet light curable resin; and  
the light transmittable material is an ultraviolet light transmittable material; and  
the light curable resin is cured by irradiating ultraviolet light through the ultraviolet  
light transmittable material.

Claim 9 (Original): The method as claimed in claim 2, wherein at least one of the  
first material and the second material includes silicon.

Claim 10 (Currently Amended): The method as claimed in claim ~~[[1]]~~ 2, wherein  
the first mold is made from a material capable of being processed by dry-etching  
including one of a metallic material, a glass material, a ceramic material, a plastic material,  
and a hard rubber material; and  
the fine surface structure of the first mold is formed by one of dry-etching and  
lithography.

Claim 11 (Currently Amended): The method as claimed in claim ~~[[1]]~~ 2, wherein the  
first mold is fabricated by forming the fine surface structure on a plate made from the first  
material.

Claim 12 (Currently Amended): The method as claimed in claim 2, wherein the  
~~second~~ transferring ~~step of fine surface structure of the second curable resin~~ includes ~~a step of~~  
determining the second size of the fine surface structure of the second mold in such a way so  
as to include an amount of shrinkage of the second curable resin during the ~~second~~-curing  
~~step of at least a portion of the second curable resin.~~

Claim 13 (Currently Amended): The method as claimed in claim 3, further comprising steps of:

performing a first surface treatment on the surface of the first mold having the fine surface structure to improve adhesion between the first curable resin and the second material after the first de-molding treatment and before the ~~second step~~ fabricating of the second mold; and

performing a second surface treatment on the surface of the second mold having the fine surface structure to improve adhesion between the second curable resin and the object material after the second de-molding treatment and before the ~~third step~~ fabricating of the article.

Claim 14 (Currently Amended): The method as claimed in claim [[1]] 2, wherein the first step comprises steps of:

applying a photo-conducting material onto a surface of the first material;  
irradiating light onto the photo-conducting material using a mask having a light transmittance distribution, and developing the photo-conducting material to form a predetermined pattern on the photo-conducting material; and  
transferring the pattern on the mask to the first material by dry-etching.

Claim 15 (Currently Amended): The method as claimed in claim 2, wherein the ~~first step~~ fabricating of the first mold includes ~~a step of~~ forming a channel on the first mold for an uncured portion of the first curable resin surrounding the cured portion of the first curable resin to flow in to fill in a space generated due to shrinkage of the first curable resin during curing; and

the ~~second step~~ fabricating of the second mold includes ~~a step~~ of forming a channel on the second mold for the uncured portion of the second curable resin surrounding the cured portion of the second curable resin to flow in to fill in a space generated due to shrinkage of the second curable resin during curing.

Claim 16 (Currently Amended): A method for fabricating an article from an object material including an object fine surface structure ~~having one or more elements~~, the method comprising:

~~a first step of~~ fabricating a surface structure substrate by forming a preliminary surface structure on the object material, said preliminary surface structure having ~~elements corresponding to the elements of the object fine surface structure~~ a size slightly smaller than the object fine surface structure;

~~a second step of~~ fabricating a mold from a mold material, the mold including a fine surface structure inverted to the object fine surface structure and having a size nearly equal to the size ~~elements equivalent to the elements of the object fine surface structure in shape~~; and

~~a third step of fabricating the article by transferring shapes of the elements of the~~ inverted fine surface structure of the mold to ~~the corresponding elements of the preliminary surface structure on the surface structure substrate~~ in alignment with the preliminary surface structure on the surface structure substrate ~~to form the elements of the object fine surface structure,~~

wherein

the transferring the surface structure comprises:

applying a curable resin onto the mold to cover the inverted fine surface structure and pressing the surface structure substrate against the mold with the curable resin in between to transfer the inverted fine surface structure of the mold to the curable resin;

curing at least a portion of the curable resin;  
separating the curable resin from the mold with the curable resin being bonded with  
the surface structure substrate; and  
transferring the fine surface structure of the curable resin to the surface structure  
substrate by dry-etching to form the article with the fine surface structure of the curable being  
in alignment with the preliminary surface structure.

Claim 17 (Currently Amended): The method as claim in claim 16, wherein in ~~the first step~~ fabricating the surface structure substrate, the preliminary surface structure is formed by a method including at least one of sandblasting, dry etching, wet etching, dicing, polishing, cutting, sol-gel method, glass bonding, and thin film formation including vacuum evaporation, sputtering, and CVD (Chemical Vapor Deposition).

Claim 18 (Canceled).

Claim 19 (Currently Amended): The method as claimed in claim ~~[[18]]~~ 16, further comprising ~~a step performing~~, after the ~~second step~~ fabricating of the mold and before ~~the third step the fabricating of the article, of performing~~ a de-molding treatment on a surface of the mold having the fine surface structure to facilitate separation of the curable resin from the mold in the separating step of the curable resin from the mold.

Claim 20 (Currently Amended): The method as claimed in claim ~~[[18]]~~ 16, wherein the transferring step of the fine surface of the curable resin includes ~~a step of changing a dry-~~ etching selection ratio of etching the curable resin and the object material.

Claim 21 (Original): The method as claimed in claim 20, wherein the dry-etching selection ratio varies with time.

Claim 22 (Currently Amended): The method as claimed in claim ~~[[18]]~~ 16, wherein the curable resin includes a light curable resin;  
at least one of the mold material and the object material sandwiching the curable resin includes a light transmittable material; and  
the curable resin is cured in the curing step by irradiating light through the light transmittable material.

Claim 23 (Original): The method as claimed in claim 22, wherein  
the light curable resin is an ultraviolet light curable resin; and  
the light transmittable material is an ultraviolet light transmittable material; and  
the light curable resin is cured by irradiating ultraviolet light through the ultraviolet light transmittable material.

Claim 24 (Original): The method as claimed in claim 16, wherein  
the mold is made from a material capable of being processed by dry-etching; and  
the fine surface structure of the mold is formed by one of dry-etching and lithography.

Claim 25 (Original): The method as claimed in claim 16, wherein the mold is fabricated by forming the fine surface structure on a plate made from the mold material.



Claim 26 (Currently Amended): The method as claimed in claim [[18]] 16, wherein a size of the fine surface structure of the mold is determined to include an amount of shrinkage of the curable resin during the curing step.

Claim 27 (Currently Amended): The method as claimed in claim 19, further comprising ~~a step of performing~~, after the de-molding treatment and before the third step, ~~of performing~~ a surface treatment on the surface of the mold having the fine surface structure to improve adhesion between the curable resin and the object material.

Claims 28-32 (Canceled).